

ABSTRACT

A transmission diffraction grating body including a base material being substantially transparent with respect to wavelength λ_1 and having a refractive index n_0 ; another base material being substantially transparent with respect to wavelength λ_1 and having a refractive index n_1 , which is formed on the base material having a refractive index n_0 ; and a relief diffraction grating formed on the base material having a refractive index n_1 ; wherein the refractive indexes n_1 and n_0 satisfy the relationship: $n_1 > n_0$. Thus, the base material having a refractive index n_1 can be formed of a high refractive index material, and when the depth of grating of the diffraction grating is set so that the diffraction grating diffracts the light with wavelength λ_1 and does not diffract the light with wavelength λ_2 , the depth of grating of the diffraction grating can be made to be shallow, thus preventing the loss of the amount of the light with wavelength λ_1 . Furthermore, since base materials each having a different refractive index are bonded to each other to form a diffraction grating body, it is possible to minimize the use amount of the relatively expensive material having a high refractive index. Furthermore, since the most of the diffraction grating body can be formed of a material having a low refractive index, it is possible to lower the height of the diffraction index body.